CLAIMS

Please amend the presently pending claims as follows:

1. (Currently Amended) A method for ~~the~~ sending ~~of~~ a signal formed by vectors, each vector comprising N source symbols to be sent, and implementing M transmit antennas where M is greater than or equal to 2, the method comprising:

linearly precoding said signal, implementing a matrix product of a source matrix, formed by said vectors organized in successive rows, by a linear precoding matrix, delivering a precoded matrix, and

sending precoded vectors corresponding to columns of said precoded matrix successively, wherein ~~the~~ each precoded vector has M symbols, which ~~of each precoded vector~~ have undergone a precoding by a same column of the linear precoding matrix and are distributed over said M antennas.

2. (Previously Presented) The method according to claim 1, wherein the precoding matrix comprises a block matrix.

3. (Previously Presented) The method according to claim 1, wherein the precoding matrix comprises a unitary matrix having a size greater than or equal to M.

4. (Previously Presented) The method according to claim 1, wherein the precoding matrix has the form:

$$\Theta_L = \sqrt{\frac{2}{L}} \cdot \begin{bmatrix} \Theta_{L/2} & \Theta_{L/2} \\ \Theta_{L/2} & -\Theta_{L/2} \end{bmatrix}^T$$

with $\Theta_2 = \begin{vmatrix} e^{i\theta_1} \cos\eta & e^{i\theta_2} \sin\eta \\ -e^{-i\theta_2} \sin\eta & e^{-i\theta_1} \cos\eta \end{vmatrix}$

and $\eta = \frac{\pi}{4} + k\frac{\pi}{2}$, $\theta_2 = \theta_1 - \frac{\pi}{2}$, and for i$\in$[1,2], $\theta_i = \frac{\pi}{4} + k'\frac{\pi}{2}$ where k, k' are relative integers.

5. (Currently Amended) A method for ~~the reception of~~ receiving a signal sent on M transmit antennas where M is greater than or equal to 2, implementing P receiver antennas, where P greater than or equal to 2, wherein the method comprises:

receiving reception vectors on said P antennas, which are distributed by columns in a reception matrix, each reception vector comprises P received symbols distributed on said P receiver antennas and corresponding symbols having undergone a precoding by a same column of a linear precoding matrix at sending, ~~wherein P symbols of each reception vector are distributed on said P antennas,~~

processing said reception matrix, comprising multiplying by a linear de-precoding matrix representing the ~~a~~ linear precoding matrix used at sending, so as to obtain a de-precoded matrix by which it is possible to extract an estimation of source symbols sent in the signal.

6. (Previously Presented) The method according to claim 5, wherein the de-precoding matrix is the conjugate transpose matrix of said precoding matrix.

7. (Previously Presented) The method according to claim 6, wherein said sent signal is conveyed between said M transmit antennas and said P receiver antennas by a transmission channel, said reception matrix is multiplied, during said processing, by a matrix representing the inverse of said transmission channel, so as to obtain a matrix of estimated symbols sent, and wherein said matrix of estimated symbols sent is then multiplied by the de-precoding matrix.

8. (Previously Presented) The method according to claim 6, wherein the method comprises a preliminary step of detecting said M transmit antennas implementing a successive cancellation algorithm.

9. (Previously Presented) The method according to claim 5, wherein said sent signal is conveyed between said M transmit antennas and said P receiver antennas by a transmission channel, and said de-precoding matrix is an inverse matrix of a total matrix associating the matrix of said channel and said linear precoding matrix.

10. (Previously Presented) The method according to claim 9, wherein said de-precoding matrix is determined by implementation of a Cholesky decomposition algorithm.

11. (Currently Amended) A ~~signal~~ method comprising:

generating a signal comprising precoded vectors to be sent successively on M transmit antennas, where M is greater than or equal to 2, ~~the M symbols of each vector being distributed on said M antennas~~, wherein the precoded vectors correspond to columns of a precoded matrix and each precoded vector has M symbols, which have undergone a precoding by a same column of the linear precoding matrix and are distributed on said M antennas,

and wherein the precoded matrix is ~~wherein the vectors are precoded vectors corresponding to columns of a precoded matrix~~ obtained by a matrix product of a linear precoding matrix and a source matrix, formed by source vectors each comprising N source symbols to be sent, said source vectors being organized in said source matrix in successive rows, and

sending the signal.

12. (Currently Amended) A device for sending a signal formed by vectors each comprising N source symbols to be sent, and implementing M transmit antennas, where M is greater than or equal to 2, the device comprising:

means of linearly precoding said signal, implementing a matrix product of a source matrix, formed by said vectors organized in successive rows, by a linear precoding matrix, delivering a precoded matrix, and

means for successively sending precoded vectors corresponding to columns of said precoded matrix, wherein each precoded vector has ~~the~~ M symbols, which ~~of each precoded vector~~ have undergone a precoding by a same column of the linear precoding matrix and are ~~being~~ distributed over said M antennas.

13. (Currently Amended) A device for ~~the reception of~~ receiving a signal sent on M transmit antennas, where M is greater than or equal to 2, said device comprising:

P receiver antennas, where P is greater than or equal to 2,

means of reception, on said P antennas, of reception vectors, and means of distribution by columns of said reception vectors in a reception matrix, wherein each reception vector comprises P received symbols distributed on said P receiver antennas and corresponding symbols having undergone a precoding by a same column of a linear precoding matrix at sending ~~the P symbols of a reception vector being distributed on said P antennas~~, and

means of processing of said reception matrix, comprising means of multiplying by a linear de-precoding matrix representing ~~a~~ the linear precoding matrix used at sending, so as to obtain a de-precoded matrix by which it is possible to extract an estimation of source symbols sent.